

Geography - Above satisfactory - Year 10

Portfolio summary

This portfolio of student work shows that students can use some research to develop and modify geographically significant questions to frame an inquiry (WS1). They evaluate a range of secondary sources to select relevant geographical data and information to answer inquiry questions (WS1). Students collect, record and accurately represent geographical multi-variable data in appropriate forms including graphs, tables and maps, which conform to some cartographic conventions (WS1,2). They recognise some of the significant interconnections between people, places and environments (WS1,2) and identify changes in the characteristics of places and environments over time (WS2). They analyse data and information, make some basic inferences (WS1,2) and identify trends and anomalies across time and place (WS2). Students evaluate data and information, synthesising and communicating their findings in appropriate formats using geographical terminology (WS1,2).

Research assignment: Wellbeing indicators

Sample summary

Over a period of four weeks, students examined the concept of human wellbeing and factors affecting human wellbeing. Students discussed how effective quantitative and qualitative indicators are at assessing levels of wellbeing. They were then introduced to the idea that composite indicators (such as the UN Human Development Index) are thought to give a more reliable measure of human wellbeing in a country than other indexes. Given this background, students progressed through a staged inquiry over eight lessons to develop their own justified composite wellbeing index.

Specifically, students were asked to independently select and explain 10 social and economic indicators that they considered to be effective in measuring human wellbeing in a country and to collect the relevant data using internet research. Using the statistical data, students constructed a composite wellbeing index with teacher assistance in the development of their methodology where necessary. Students were required to evaluate (from their perspective) the importance of each indicator in determining human wellbeing and decide on the weighting that each indicator would be given to calculate the index. This index was then used to rank the 10 countries according to the value of the composite wellbeing index. Finally, students evaluated their index for strengths and weaknesses, including the reliability and bias of the data sources, and proposed how their index could be improved. They presented the results in a geographical format to creatively and imaginatively display their wellbeing index.

Achievement standard

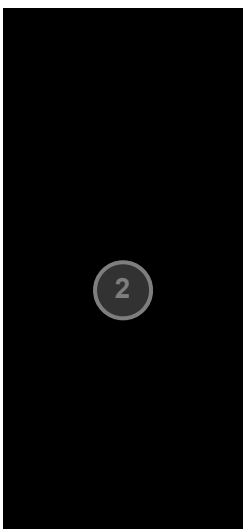
Subject

By the end of Year 10, students explain how interactions between geographical processes at different scales change the characteristics of places. Students identify, analyse and explain significant interconnections between people, places and environments and explain changes that result from these interconnections and their consequences. They predict changes in the characteristics of places and environments over time, across space and at different scales and explain the predicted consequences of change. They evaluate alternative views on a geographical challenge and alternative strategies to address this challenge using environmental,

economic, political and social criteria and draw a reasoned conclusion.

Students use initial research to develop and modify geographically significant questions to frame an inquiry. They critically evaluate a range of primary and secondary sources to select and collect relevant, reliable and unbiased geographical information and data. Students record and represent multi-variable data in the most appropriate digital and non-digital forms, including a range of graphs and maps that use suitable scales and comply with cartographic conventions. They use a range of methods and digital technologies to interpret and analyse maps, data and other information to make generalisations and inferences, propose explanations for significant patterns, trends, relationships and anomalies across time and space and at different scales, and predict outcomes. They analyse and synthesise data and other information to draw reasoned conclusions, taking into account alternative perspectives. Students present findings, arguments and explanations using relevant geographical terminology and graphic representations and digital technologies in a range of selected and appropriate communication forms. They evaluate their findings and propose action in response to a contemporary geographical challenge, taking account of environmental, economic, political and social considerations. They explain the predicted outcomes and consequences of their proposal.

Report



Year 10 Research Assignment: Well Being Indicators
 The UN Human Development Index attempts to assess human well-being using 3 indicators of well-being. Composite indicators are required to give a more reliable measure of human well-being in a country. You are to investigate and develop your own composite indicator.

TASK 1
 Select a range of 30 social and economic indicators that could be used to measure human well-being in a country. You should not choose composite indicators in this task e.g. the Human Development Index.

Indicators of well-being chosen:
 Control of Corruption
 GDP (Current PPP Adjusted)
 Out of school children of school age (1000000 people)
 Top 10% income share
 Child mortality rate
 Top 10% income share
 Life expectancy
 Ratio of pop. attending school, 15+ without accomp to bus
 National average life expectancy
 Top 10% income share

TASK 2
 Outline each indicator and explain how it is a measure of human well-being.

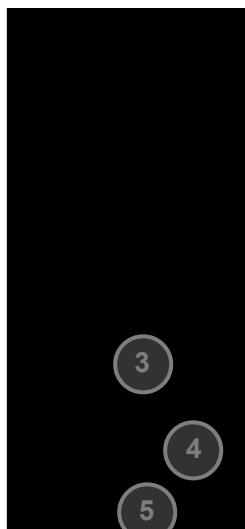
GDP per capita is a quantitative measurement that divides the Gross Domestic Product (GDP) of a country by the population. GDP is a measurement of national income of a country divided by its National Output and National Expenditure. It is important for GDP per capita to take into account inflation. This is known as the Real GDP. The average GDP per capita in 2010 is \$2000. It is currently rising, as some countries like Luxembourg have a GDP per capita over \$50,000 while many developing countries have a GDP per capita of less than \$2000. For example, the Central African Republic has a GDP per capita of only \$500.

GDP per capita is very useful in indicating the financial situation of any country and its residents. As the financial security and wealth of a country is a social human well-being, GDP per capita is a very effective measurement of human well-being. If the residents of a country have a low GDP per capita, they are unable to afford food, decent healthcare and the government is unable to boost sanitation, roads etc., all of which are crucial in developing human well-being. As there is a positive relationship between GDP per capita and the development of a country, it is obvious the measurement is very useful in indicating human well-being.

Life Expectancy:
 Life expectancy is a measurement of the expected period of time a resident of a country will live, based on when they are born, when they reach their old age and when they die. Life expectancy is the most common used measurement to indicate population health, as it incorporates multiple aspects of health. Generally, women have a higher life expectancy than men, the global average life expectancy for women is 77 years while the global average for men is 73 years. In general, global life expectancy, there must be an increase in the quality of health care available and enough food and water to survive. Life expectancy is crucial in measuring human well-being, as a high life expectancy indicates that the residents of a country have access to decent healthcare, sanitation and an adequate supply of food, an indicator is a major cause for death especially in developing countries. A high life expectancy also indicates that there are no major issues or diseases affecting the country. In all developed countries have a high life expectancy, life expectancy is very effective in measuring human well-being.

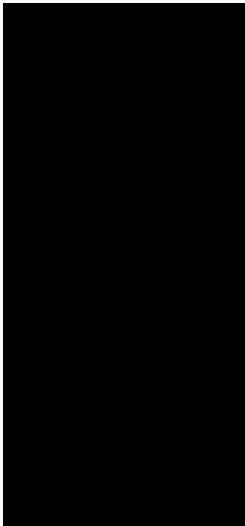
Percentage of population with access to electricity:
 Percentage of population with access to electricity is a measurement of the percentage of people in a country that have ready, reliable access to electrical services. Approximately 1.3 billion people are still without access to electricity, and an estimated \$24.5 billion will need to be invested to achieve global electricity access. Electricity access is viewed as one of the key ways to promote progress in developing countries, as access to electricity can stimulate economic growth and improve productivity, which are major goals of development.

Percentage of population with access to electricity is a very effective indicator of human well-being, as it incorporates multiple aspects of human well-being: the provision of clean, sustainable and healthcare, lighting, heating, transport and communication. If a country has a high percentage of the population with access to electricity, there will be a large amount of people with access to the aforementioned goods, which are very critical to human well-being.



Annotations

- 1 Annotation 1**
 Identifies a variety of significant interconnections between people, places and environments
- 2 Annotation 2**
 Explains a number of different significant relationships between GDP, places and people's wellbeing
- 3 Annotation 3**
 Explains a number of different significant relationships between life expectancy and people's wellbeing
- 4 Annotation 4**
 Explains a number of different significant relationships between access to electricity and wellbeing
- 5 Annotation 5**
 Explains a range of changes that result from these interconnections and their consequences



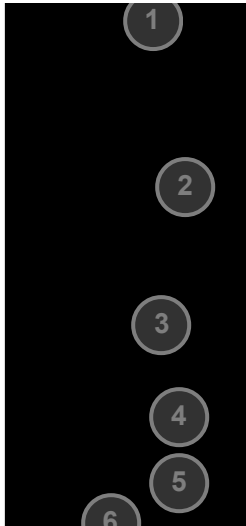
Unemployment Rate:
 Unemployment rate is a measurement of the percentage of people in the workforce that are without a job. Unemployment rate is calculated by dividing the number of unemployed people by the total workforce. Unemployment is often the result of lack of job opportunities, lack of skills, required or a recession. The global unemployment rate is 6% as of 2015, and it appears that this rate is decreasing as more job opportunities are available and the quality of education increases. However, there are at times a large amount of people unemployed who have chosen not to work, or work part-time. This is most present in developed countries, where social security gives people the opportunity to choose not to work, and still have a source of income.
 Unemployment rate is a poor effective measurement of human wellbeing, as a low unemployment rate indicates that there are sufficient job opportunities for people, which indicates that citizens have a sustainable source of income. It also indicates that the economy is efficient, which is very important for measuring economic growth. A low unemployment rate also indicates that there is also a robust education system, so that people are able to receive the qualifications and skills needed to enter their field of choice.

Doctors per 1000 people:
 Doctors per 1000 people refers to the number of trained physicians per 1000 people in a country or area. It is estimated that there are between 10-15 million doctors in the world, which equates to roughly 42-52 doctors per 1000 people. However, WHO (the World Health Organization) has indicated that there is a shortage of 4.3 million physicians, and this is especially needed in developing countries. WHO has indicated that 1 doctor per 1000 people is an adequate number, however in most developed countries this number is considerably less. Many doctors from developing countries have their families to get educated in developed countries. However, it is very common for these doctors not to return, as they will receive better wages and have a better lifestyle in developed countries. Similarly, there is often an maldistribution of doctors within a country, an obvious example of this is the establishment of doctors in Australia. There are large amounts of doctors in major cities but very small amounts of doctors in the country. This is an indication of doctor access.
 Doctors per 1000 people is also an effective indicator of human wellbeing, as it outlines the quality of healthcare available to people, as if there is a high number of doctors per 1000 people the average person should receive good healthcare. As becoming a doctor can be very challenging academically, it is also inferred that there must be a high standard of education available for there to be a high number of doctors per 1000 people. As both education and health are important aspects of human wellbeing, doctors per 1000 people is a good indicator of human wellbeing.

Infant Mortality Rates:
 Infant Mortality Rates refers to the number of children who die under the age of 5 per 1000 live births. Infant mortality is often caused by disease, such as birth asphyxia, pneumonia, malnutrition and measles. There are multiple factors that can result in infant mortality, for example lack of prenatal care, malnutrition and poor healthcare, environmental conditions and access to sanitation. Globally, the infant mortality rate is 32 deaths per 1000 live births, and this rate is rapidly decreasing, in 1990 the infant mortality rate was 52 deaths per 1000 live births, but only three infant mortality rate has an obvious correlation with the health of a country, infant mortality rate has a relationship with other aspects of human wellbeing. For a developing country to improve its sanitation, they may require foreign aid to learn which can be very taxing on a future state. It is for these reasons that infant mortality rate is an effective measurement of human wellbeing, as it covers multiple aspects of human wellbeing, sanitation, public healthcare, immunisations and opportunities available for pregnant women.

Population Growth (annual %):
 Population Growth refers to the annual percentage at which the population of a country increases or decreases. World Population Growth is approximately 75 million annually, or an increase of 1.1% per year, and this continues to rise due to increases both the quality and availability of medicine. Population growth is rapid in parts of Africa, where the culture is meant to have large families with an average of 4-7 children. However, medicine has improved more of these children survive to past their growth has increased considerably. However, the very growth has increased due to the availability of resources will decrease from unsustainable population growth.
 Population growth therefore is an indicator of human wellbeing, as high population growth illustrates that there are not enough resources to support the sustainable increasing population. Population growth can also be linked to health, which also affects human wellbeing. Additionally, lack of education on contraception and family management can result in population growth. Population growth is also related to education.

Adult Literacy Rates:
 Adult Literacy Rates is a measurement of the percentage of adults who are able to read and write in any language. Literacy rates are considered to be an effective measurement of human wellbeing, as literacy rates are linked to human wellbeing, someone who is literate, and people who are literate are more productive in their workplace. The global literacy rates



Annotations

1 Annotation 1
 Explains a number of different significant relationships between unemployment and people's wellbeing

2 Annotation 2
 Explains a number of different significant relationships between access to doctors and people's wellbeing

3 Annotation 3
 Explains a number of different significant relationships between infant mortality rates and people's wellbeing

4 Annotation 4
 Explains a number of different significant relationships between population growth and people's wellbeing

5 Annotation 5
 Explains a number of different significant relationships between adult literacy rates and people's wellbeing

6 Annotation 6
 Explains a number of different changes that result from these interconnections and their consequences

90% for males and 82.7% for females, and this rate continues to increase alongside the increasing quality of education. The main reason for the increase in literacy rates between years is the presence of women or girls' loss of cultural traditions in some countries that forbid women to go to school, for example Afghanistan.

Adult literacy rates are effective indicators of human wellbeing, as it is arguably the simplest indicator for education. Countries with a high literacy rate must have a suitable education system available for everyone and would have also have a large amount of people working in either the secondary or tertiary sectors of employment, which can catalyse economic growth in developing countries.

Murder Rate
Murder rate refers to the number of homicides that occur per 100,000 people. Murders are most commonly caused by domestic disputes, violence over resources, interpersonal violence and gang violence. Murder rate only consists of murders committed by small groups or individuals, so acts of mass murder are excluded. The average global murder rate is 0.2 per 100,000 people as of 2015. However, this is unevenly distributed, with Africa and South America having a considerably higher murder rate than the rest of the world.

Murder rates are an accurate indicator of human wellbeing, as it is able to measure the level of violence in countries, the amount of corruption, effectiveness of law enforcement and the righteousness and impartiality of the government. For countries that have high murder rates, not only is there a lack of rights, it is inferred that the government are doing nothing to prevent it.

Percentage of women employed
The percentage of women employed is a measurement of the percentage of all women that are employed and paid in the work force. The percentage of women employed is calculated as the same measure as the unemployment rate, however only women are used. Women account for 48% of the world's workforce, so 52% of women are employed. On average, women also earn less than men annually.

The percentage of women employed is very useful in understanding the levels of sexism and oppression in a country. Countries that do have a high percentage of women employed have strong, more democratic systems of government and better education available for women, both of which are indicators of human wellbeing.

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Annotations

- 1 **Annotation 1**
Explains a number of different significant relationships between murder rate and people's wellbeing
- 2 **Annotation 2**
Explains a number of different significant relationships between female employment and people's wellbeing
- 3 **Annotation 3**
Uses relevant geographical terminology
- 4 **Annotation 4**
Explains a number of different changes that result from these interconnections and their consequences

TASK 3
Collect the data and display your results in a table for the 10 countries your teacher has chosen. You may use any number of references; however, you must cite the source of all your statistics in a bibliography.

Factors of Wellbeing	Argentina	Canada	Germany	Ethiopia	India	Indonesia	Norway	Peru	USA	Zambia
Child birth rate (per 1,000 people)	19	11	9	33	20	20	12	20	13	40
Doctors per 1000 people	3.21	2.1	3.4	0.03	8.4	0.13	3.1	1.17	2.3	0.32
Electricity consumption (KWh per capita)	2955	15615	7270	57	744	730	23658	1211	12954	571
Employment rate (% of people 15+)	58	64	54	81	55	62	65	68	62	61
GDP/capita (Current US\$)	12509.5	56235.4	47821.9	573.6	1581.5	3451.9	97307.4	6541	54629.5	1721.6
Infant mortality rate (per 1,000 births)	11	4	3	41	38	23	2	13	6	43
Life expectancy at birth	76	81	81	63	68	69	81	74	79	59
Literacy rate (% of people aged 15 and above)	98	90	99	39	63	93	100	90	86	61
Murder rate (per 1,000 people)	5.3	1.7	0.55	2.6	6.3	9.7	0.63	3.1	6.4	30
Access to electricity (% of population)	99.8	100	100	26.6	78.7	96	100	91.2	100	22.1

- 1

Annotations

- 1 **Annotation 1**
Records data in an appropriate format with clear units of measurement associated with each indicator

TASK 4
Construct a wellbeing index, using your indicators and rank the 10 countries.

Creating the Index
Creating my index was fairly straightforward. After weighting my indicators, I multiplied the statistic the country obtained by the weighting I gave to the indicator. This can be denoted as $x \times s$

Factors of human wellbeing	Argentina	Canada	Germany	Ethiopia	India	Indonesia	Norway	Peru	USA	Zambia
Child birth rate (per 1000 people)	162	99	81	297	389	180	108	130	117	360
Doctors per 1000 people	24.88	18.9	27.2	0.24	4.8	1.04	22.8	9.36	18.4	0.96
Electricity consumption (kWh per capita)	2360	124920	58160	456	3925	5840	109264	9688	103632	4568
Employment rate (% of people 15+)	390	320	230	405	275	310	325	340	310	305
GDP/capita (Current US\$)	125095	502344	478219	3786	13834	34919	973078	65410	346295	12210
Infant mortality rate (per 1,000 births)	66	24	18	240	228	138	12	78	36	288
Life expectancy	760	810	810	630	680	690	810	730	790	560
Literacy rate (% of people aged 15 and above)	980	900	990	300	630	930	1000	900	860	610
Murder rate (per 1000 people)	26.5	8.5	2.75	130	31.5	48.5	8.15	15.5	32	150
Access to electricity (% of total population)	698.0	700	700	180.2	350.0	472	700	688.4	700	134.7

From here, I found the average placing for all ten countries by averaging their placements in all factors which I took into account for my wellbeing index. To do this, I split my factors into three groups: Social, economic and health.

Factors of Wellbeing

- Child birth rate (per 1,000 people)
- Doctors per 1000 people
- Electricity consumption (kWh per capita)
- Employment rate (% of people 15+)
- GDP/capita (Current US\$)
- Infant mortality rate (per 1,000 births)
- Life expectancy at birth

Literacy rate (% of people aged 16 and above)

Murder rate (per 1,000 people)

Access to electricity (% of population)

Key:

- Blue = health
- Green = economic
- Orange = Social

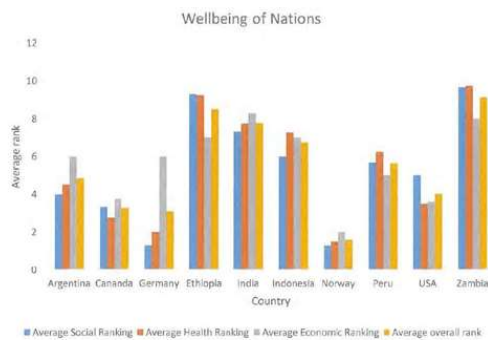
I decided to include an extra factor in my health index as, although the other two groups are important to consider when creating an index, it is essential to show the health and living standards within a country when assessing wellbeing, which is why they are a little more heavily weighted in this index. From here, I found the average placing for each country in each of the three categories:

Group	Argentina	Canada	Ethiopia	Germany	India	Indonesia	Norway	Peru	USA	Zambia
Social	4	3.33	9.3	1.3	7.3	6	1.3	5.67	5	9.67
Health	4.5	2.75	2	9.25	7.75	7.25	1.5	6.25	3.5	9.75
Economic	6	3.75	6	7	8.3	7	2	5	3.6	8

Please note that, although some rankings are in decimal form, the rankings system I used meant that the best scores were ranked 1 and the worst ranked 10. This does not tell the actual rank of the country within the index but the average placement for it within all three groups, which are comprised of the ten indicators. I then found the average placement across all three categories for each country, and from there ranked them from best to worst placing:

Country	Overall average Placement	Overall Rank
Argentina	4.83	5
Canada	3.276	3
Germany	3.1	2
Ethiopia	8.516	9
India	7.783	8
Indonesia	6.75	7
Norway	1.6	1
Peru	5.64	6
USA	4.033	4
Zambia	9.14	10

Using this data, I created a graph to illustrate more effectively which countries were depicted to have a higher level of wellbeing to others:



Annotations

- Annotation 1**
Constructs a wellbeing index that effectively ranks countries

Annotations

- Annotation 1**
Specifies methods used to interpret and analyse data

Annotations

- Annotation 1**
Analyses and synthesises data in a graphical format

1

2

TASK 5
Evaluate the importance of each indicator in determining human wellbeing and decide on the weighting that each indicator will be given in calculating the index.

General Reasoning for Weighting:
The indicators that were weighted 3-5 are those that believe to be imperative to human wellbeing. Not only do these indicators have a major impact on human wellbeing, there is also an obvious relationship between these indicators and human wellbeing, for example people with a high GDP per Capita almost always have a high standard of human wellbeing. These indicators are:

- GDP per Capita
- Life Expectancy
- Percentage of population with access to electricity
- Indicator that were weighted 5:7 are those that believed as less significant than the major indicators on an indicator indicator of a certain aspect of human wellbeing. Some indicators were not included in the index as they do not seem to be an area of human wellbeing, for example unemployment rates. The other indicators were viewed as less significant indicators of a certain aspect of human wellbeing, for example infant mortality rate, which is not as effective an indicator for the health of a country as life expectancy is, so it is not included.

The indicators are:

- Unemployment Rate
- Doctors per 1000 people
- Infant Mortality Rate
- Adult Literacy Rates

These indicators that were weighted 4 are those that believed unnecessary or insignificant in human wellbeing. These indicators may be seen as unnecessary as there is no obvious relationship between these indicators and human wellbeing, for example percentage of women employed. Alternatively, these indicators may be thought to be less important as they do not have a large enough impact on human wellbeing, for example murder rates.

These indicators are:

- Population growth
- Adult Literacy Rates
- Murder Rate
- Percentage of women employed

Individual Explanations on weighting:

GDP per Capita
GDP per Capita is the most important factor to include when constructing a human wellbeing index. As previously mentioned, there is a strong correlation between GDP per Capita and the development of a country and the human wellbeing of its citizens, so it is a vital indicator to include. A high GDP per Capita indicates that a country is able to have access to food, shelter, healthcare, schooling and all other important aspects of a country. This is not the case in low-income countries, so it has both the highest GDP per Capita and the highest ranking on the wellbeing index. It is for this reason that it is the most weighted indicator, as not only does it cover multiple aspects of wellbeing, there is an obvious relationship between high GDP per Capita and human wellbeing, and there are no outliers in this trend.

Life Expectancy
Life expectancy is a very important indicator of human wellbeing, as it shows how long a high life expectancy indicates that citizens have access to substantial healthcare, sanitation and that there are no major issues of citizens present in the country. It is the most obvious indicator of the health of a country. It is important that life expectancy is weighted. However, this may not always be the case, as some countries may actually have a high life expectancy as a result of their low income and inadequate healthcare systems, for example Japan's 200+ years. This is for this reason the Life Expectancy is not the most significant indicator.

Percentage of population with access to electricity
Percentage of population with access to electricity is an important indicator when determining human wellbeing. Access to electricity is a key aspect of human wellbeing, the presence of it allows for better education and health care, lighting, heating, transport and communication. Percentage of population with access to electricity is also one of the most important indicators of human wellbeing, which is why it is weighted. However, it is not as important as other indicators. Ultimately, the wide variety of factors that can be affected based on percentage of population with access to electricity is better to use as an indicator of human wellbeing, which is why it is not as heavily weighted.

Annotations

- Annotation 1**
Clarifies information and systematically analyses the implications for the weighting of each indicator
- Annotation 2**
Provides a number of specific examples to support the judgement being presented

3

1

2

TASK 6
Comment on the strengths and weaknesses of your index, including the reliability and bias of the data sources. How could you improve the index?

Strengths and Limitations of the Index

Strengths:
The indicators used in the index are good at determining an impact on the citizens in a country, with the whole index being designed around this idea. This means that the index is a good indicator of how the life is on the ground for the average person. This is true because the indicators are weighted in such a way that those that directly affect the situation for an individual person (sanitation, out of school children) are weighted substantially higher than ones that reflect a more theoretical idea of wellbeing (GDP Capita). The impact on citizens on the ground is substantially more important than a theoretical idea of wellbeing because there are cases of countries who theoretically should have high wellbeing due to factors like GDP Capita but actually have a high population such as China, and countries which should theoretically have a high level of wellbeing due to factors like GDP Capita but actually have a low population such as Iceland. This means that the index is a good indicator of how the life is on the ground for the average person.

Limitations:
Finally, there are two main limitations with this index. The first is the reliability of the data and how it is collected. Each indicator is updated yearly from year to year, further increasing accuracy and reliability. The second is the way the index is calculated. While the index is a good indicator of human wellbeing, it is not as accurate as other indicators. For example, the index is based on the average of the indicators, which means that a high score in one indicator can offset a low score in another. This means that the index is not as accurate as other indicators.

In addition, the index is very good at determining the actual wellbeing of a place in terms of how it affects people, but it does not take into account the way that people interact with their country. This is reflected by large jumps in the index score for that country. These jumps, however, may not be reflective of the true situation in the country as they may be the indicators of how sustainable the development is and whether it comes at a particular cost to some other area, namely:

Annotations

- Annotation 1**
Clarifies information and systematically analyses the implications for the weighting of each indicator
- Annotation 2**
Uses relevant geographical terminology
- Annotation 3**
Provides a number of specific examples to support the judgements being presented

4

TASK 7
Comment on the strengths and weaknesses of your index, including the reliability and bias of the data sources. How could you improve the index?

Strengths and Limitations of the Index

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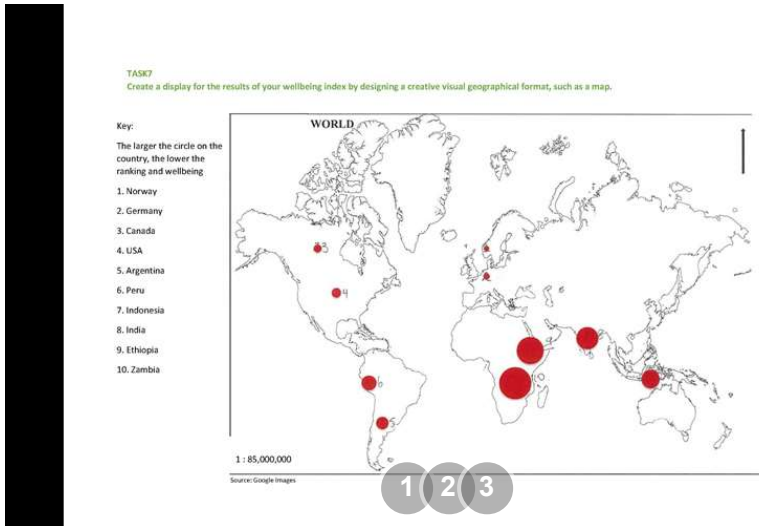
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Annotations

- Annotation 1**
Makes explicit connections between the specific data sources and the effectiveness of the index
- Annotation 2**
Identifies clearly the strengths and weaknesses of the findings
- Annotation 3**
Presents at least one

area for improvement and analyses the specific reasons for these changes

- 4 Annotation 4**
Presents a reasoned analysis of the reliability of the chosen data sources



Annotations

- 1 Annotation 1**
Uses suitable scale and cartographic conventions
- 2 Annotation 2**
Interprets given data to create a data display map of relative wellbeing ranking
- 3 Annotation 3**
Designs a symbolic system to represent relative rankings across countries

Data analysis: Human wellbeing

Sample summary

Students were required to use and respond to a range of presented data sources to form conclusions about human wellbeing in African countries. The task was completed in test conditions as a summative assessment at the end of a two-week inquiry unit. It involved a series of structured questions, and in their responses students were required to identify and explain data trends, draw inferences from data, and make predictions and proposals in relation to human wellbeing in Africa and the Millennium Development Goals.

Students were provided with several resources to which they had to respond. These included maps and a range of graphs comparing measures of human wellbeing across a number of countries.

Achievement standard

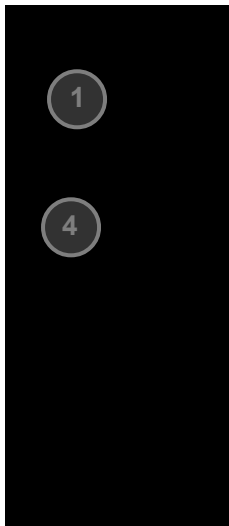
Subject

By the end of Year 10, students explain how interactions between geographical processes at different scales change the characteristics of places. Students identify, analyse and explain significant interconnections between people, places and environments and explain changes that result from these interconnections and their consequences. They predict changes in the characteristics of places and environments over time, across

space and at different scales and explain the predicted consequences of change. They evaluate alternative views on a geographical challenge and alternative strategies to address this challenge using environmental, economic, political and social criteria and draw a reasoned conclusion.

Students use initial research to develop and modify geographically significant questions to frame an inquiry. They critically evaluate a range of primary and secondary sources to select and collect relevant, reliable and unbiased geographical information and data. Students record and represent multi-variable data in the most appropriate digital and non-digital forms, including a range of graphs and maps that use suitable scales and comply with cartographic conventions. They use a range of methods and digital technologies to interpret and analyse maps, data and other information to make generalisations and inferences, propose explanations for significant patterns, trends, relationships and anomalies across time and space and at different scales, and predict outcomes. They analyse and synthesise data and other information to draw reasoned conclusions, taking into account alternative perspectives. Students present findings, arguments and explanations using relevant geographical terminology and graphic representations and digital technologies in a range of selected and appropriate communication forms. They evaluate their findings and propose action in response to a contemporary geographical challenge, taking account of environmental, economic, political and social considerations. They explain the predicted outcomes and consequences of their proposal.

Analysis



Refer to Figures 1-4

1. Describe the general trend between life expectancy and infant mortality rates in Africa in 2007.

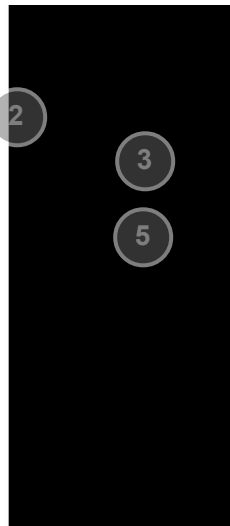
It can be seen through figure 1, 3 and 4 that as the level of life expectancy increases the level of infant deaths decreases. An example of this is Egypt which has a life expectancy of 71.3 and an infant mortality rate of 20. It can also be seen through these figures that as the life expectancy increases the level of infant mortality increases. Ethiopia is an example of this with a life expectancy of 53 and an infant mortality rate of 73.

2. Suggest possible reasons for the general trend and anomalies in the data between life expectancy and infant mortality rates in Africa in 2007.

A possible reason for this trend is that countries with better healthcare and access to health services often have a higher life expectancy and their babies tend to be longer. This is because if there is healthcare services available and it is not too far, many of the babies and the rest of the population for that matter, healthy. This could mean that the countries with the better healthcare and therefore higher life expectancies and lower infant mortality rates are more advanced. Quality countries with high levels of education have more hospitals and doctors practices available and people are closer to them. This is because hospitals are in cities and if more people live in cities than there will be more people close to hospitals and such so they can physically access health services to maintain a healthy population.

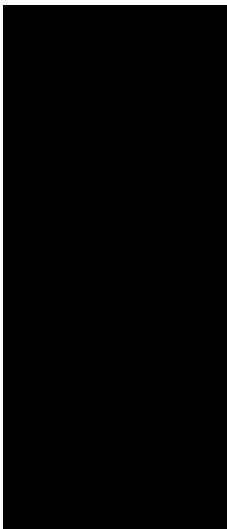
A possible reason for the Swaziland having such a low life expectancy but an average infant mortality rate could be that there are problems such as drought, famine and diseases as well as conflict in the country. This may not affect the child until they are older and therefore the infant mortality rate is low but the life expectancy is the lowest in the continent.

A possible reason for the high life expectancy and high infant mortality rate is that there could be very little access to hospitals and/or there are diseases prevalent such as unhygienic rough that mostly only affects children. Poor access to hospitals can mean that pregnant women and new born babies cannot do so or a suitable environment to do so. This can mean that the baby can die during or shortly after birth. This is also connected to urbanisation. The poor access to hospitals may mean that the majority of the population live in rural areas meaning proximity to healthcare services is low. This means it is harder for women to have children in a safe environment and enabling it to be longer.



Annotations

- 1 **Annotation 1**
Identifies a general trend in the data
- 2 **Annotation 2**
Provides specific characteristics and examples of the trend
- 3 **Annotation 3**
Makes explicit connections between trends in the data and life expectancy/infant mortality
- 4 **Annotation 4**
Makes explicit connections between anomalies in the data and life expectancy/infant mortality
- 5 **Annotation 5**
Uses relevant geographical terminology

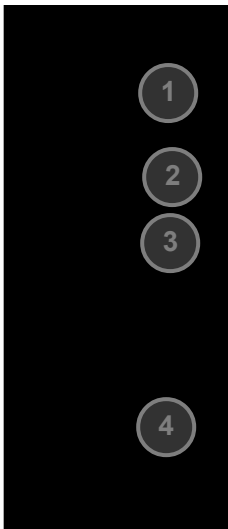


5. Using evidence from Figures 5-11, explain how the process of urbanisation improves levels of human wellbeing.

Main points	Elaboration and evidence
It can be seen that people who live in urban areas have a better literacy rate.	In figure 10 it can be seen that only two countries have 100% of both adults and children with literacy skills. This is due to the higher percentage of people living in urban areas. The remaining countries, Turkey, India, Iran and Malawi however don't reach this level of literacy as they have more people living in rural areas. It can be seen from the bar graph that Malawi has the lowest percent of literacy skills. It is also seen from figure 9 that it has the lowest amount of people living in urban areas. Due to their population not living in urban areas, schools cannot be distributed properly to the problem, as most of their population live in rural areas. Figure 9b shows that the country with the highest level of literacy is both Japan and Australia. Both the countries have a level of 100%. It can be seen from figure 2 that Australia has an 85.7 percent of people living in urban areas and Japan 85.5. Meaning that schools and population density for teaching literacy skills can be put into place. As there population is more consistent.
Women who live in urban areas are having less children.	It can be seen from figure 8 that women living in a higher populated area is that of other countries, are having less children. It can be seen that women from other countries are educated in safe jobs then that of women from Malawi who have an average of 6 children. Figure 8 shows that women from Malawi are having the most children. A possible reason for this is they are not as educated as that of women from higher populated areas.
People living in urban areas have a higher income.	It can be seen through figure 9 that countries with a higher level of urbanisation, have a higher annual income. The bar graph shows that Australia has the highest annual income with an average of \$44,000 per year. This is a drastically high amount compared to Malawi's average income of \$14. A reason for this is due to Australia's higher population in urban areas, there are more job opportunities. Not only this but there are systems put in place by the government to help people who cannot find a job from moving to the city. It still stands on average. This showing that countries with a higher amount of people living in urban areas have a better annual income.

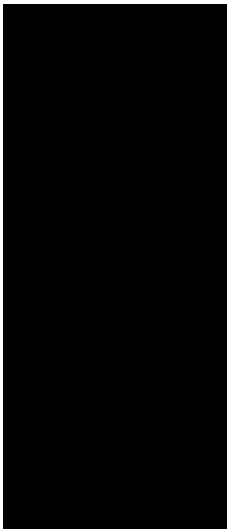
6. Evaluate the environmental, economic, political and social impacts of increasing levels of urbanisation in developing countries like Malawi.

Environmental impacts of increased levels of urbanisation.	The less people living in rural areas and the more living in urban areas will have environmental impacts. One of these is more people living in cities uses the more pollution-enabled. Due to the increase in people there will be an increase in production to provide the necessary products for these people. Not only this but more infrastructure will be put into place meaning more greenhouses or farms will be destroyed. For the purpose of housing.
Economic impacts of increased levels of urbanisation.	In these developing countries, the more people who move to cities the more money will be made. This is because the more people living in these cities the more people living in jobs. However money will be lost, due to the increase in population money, must be invested in things such as housing, Malawi will also need to be invested into opening up more schools and hospitals. As well as recreational things like parks.



Annotations

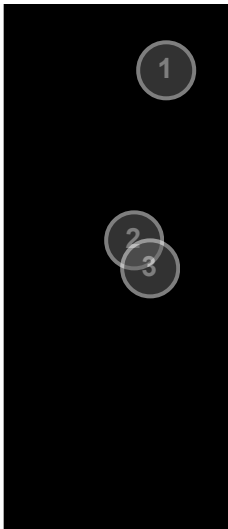
- 1 **Annotation 1**
Explains the impact of urbanisation on wellbeing
- 2 **Annotation 2**
Supports the explanation using specific data
- 3 **Annotation 3**
Makes comparisons between countries and generates inferences
- 4 **Annotation 4**
Analyses the connections between increasing urbanisation and environmental, economic, political and social impacts



Political impacts of increased levels of urbanisation.	The increase in population means that the government will have to put in place more services. Meaning that there will need to be an increase in the to provide such services. To manage the increased amount of people there will need to be a change in regulations as there are more people.
Social impacts of increased levels of urbanisation.	With the increase in population in these urban areas that means there will be some social mobility. The higher of these is overcrowding. There isn't enough room to continue spreading out so instead of moving outwards people will have to start moving upwards. This leads to people living in a condensed environment. Another impact that a growing population in urban areas will have is, a lack of job opportunities. As more people move to the city and more people get jobs less there are to lose.

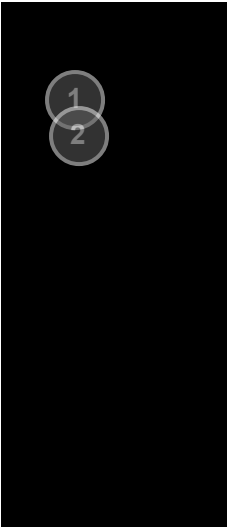
7. If people in developing countries continue to move from rural places to cities in the future, draw or represent a case for how about what may happen to the wellbeing of people who remain in rural areas. Explain the reasons for this conclusion.

As the amount of people living in urban areas increases the amount of people will living in rural areas decreases. This means there a smaller amount of people left in these areas, making the work hard together. There will be less food produced and the remaining people will begin to starve. As well as that facilities such as schools or medical centres cannot be provided in these areas as there is not enough people.
Meaning that most of these people will have a low life expectancy and be illiterate. Due to the lack of skills possessed by these people there will be less of a chance of getting a job as they cannot read or write. There will also be a higher child mortality rate as there are no hospitals or services to help.
As the rural population decreases the more of an impact it has on their wellbeing. As there is less services that can provide for them and less food. If people in rural areas choose to remain where they are, these conditions will grow harder.



Annotations

- 1 **Annotation 1**
Generates inferences based on each identified impact
- 2 **Annotation 2**
Presents conclusions about the wellbeing of people in rural areas
- 3 **Annotation 3**
Uses a series of reasons to support each conclusion



Refer to Figure 12

8. Explain the predicted outcomes and consequences for the people in Sub-Saharan Africa by focusing on this SDG in the future.

Employment is important, but without skills earned through education, no one will be employable and from employment comes money. With money, extreme poverty is abolished. Better education through more people working and governments collecting taxes from them also improves human well-being. This all starts with providing sufficient education for everyone. Education also is important for improving gender equality. History is going to change if no one knows how to change it. And when women do better, everyone does better. This means that more people are healthy, wealthy and better educated. Education is relevant for improving the health of people living in Sub-Saharan Africa. This is because you need to have sufficient skills to be a healthcare professional. This will improve maternal health, increase child mortality rates and eradicate HIV/AIDS and other diseases present in these areas. Knowing how to solve these issues starts with education. Improving the environment also requires education. You need to know how ecosystems work and what is affected by humans to improve it. However, you must be educated to know how to do it. All of the millennium development goals can be achieved if basic education is provided to all people and therefore should be given utmost priority.



Annotations

1

Annotation 1

Presents a reasoned explanation of the connections between predicted outcomes and consequences

2

Annotation 2

Uses geographical factors and specific examples to support the explanation